

Atty. Docket No.: CA1460  
**PATENT APPLICATION**

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Application No.: 09/823,470

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. *(Currently Amended)* A storage system apparatus, comprising:
  - a first storage system for storing data, and a second storage system remote from the first storage volume for storing a remote mirror copy of the data;
  - a plurality of alternative ports, providing switch-able connection from said first storage system via a plurality of networks to said second storage system, wherein the connection from said first storage system and said second storage system may be routed through at least two alternative ports of the plurality of alternative ports; said plurality of networks including a first network and a second network, said first network having a higher priority than said second network; and
  - a processor;
  - wherein said processor is operable to use at least one user provided policy to select[[s]] at least one of said plurality of alternative ports to send data from the first storage system to the second storage system, said selection based upon a comparison of at least one condition in said plurality of networks against the at least one user provided policy.

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2.     *(Previously Presented)* The storage system apparatus of claim 1, wherein said at least one condition comprises at least one of a throughput, a busy rate, an error rate, and a presence of an error.
3.     *(Currently Amended)* The storage system apparatus of claim 1, further comprising a plurality of status indications, said plurality of networks each having at least one of said plurality of status indications associated therewith; and wherein said processor determines based upon said status indications whether to select a port from said plurality of alternative ports.
4.     *(Previously Presented)* The storage system apparatus of claim 3, further comprising a network monitor, said network monitor operable to detect a condition within at least one of said plurality of networks, and thereupon set said status indication.
5.     *(Original)* The storage system apparatus of claim 3, wherein said status indication comprises at least one of available, temporarily unavailable, and unavailable.
6.     *(Original)* The storage system apparatus of claim 1, wherein said policy comprises at least one of a threshold, a maximum, a minimum, an average, a mean, a limit, a constraint, a priority, and a target.
7.     *(Original)* The storage system apparatus of claim 1, wherein said plurality of networks are grouped into a plurality of path groups, wherein said policies are associated with networks in a particular path group.

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8. *(Previously Presented)* The storage system apparatus of claim 7, wherein said first storage system and said second storage system comprises a plurality of volumes.
9. *(Previously Presented)* The storage system apparatus of claim 8, wherein each of said plurality of volumes is permitted to access networks of at least one of said plurality of path groups.
10. *(Currently Amended)* A method comprising:
- storing data in a primary storage volume;
  - specifying a first network to be used for transferring remote mirror copy data from the primary storage volume to a secondary storage volume remote from the primary storage volume;
  - specifying a first network port associated with said first network;
  - specifying a user-provided policy comprising a first-network-based constraint for said first network;
  - specifying a second network to be used for transferring the remote mirror copy data from the primary storage volume to the secondary storage volume;
  - specifying a second network port associated with said second network;
  - making said first network a higher priority network than said second network; and
  - transferring said remote mirror copy data using said first network port associated with said first network when conditions in said first network are in accordance with said ~~first-network-based constraint~~ user-provided policy, otherwise transferring said remote mirror copy data using said second network port associated with said second network, wherein a connection

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between said primary storage and said secondary storage may be routed through either the first network port or alternatively through the second network port.

11. *(Previously Presented)* The method of claim 10, further comprising:  
transferring a portion of said data using said first network even when conditions in said first network are not in accordance with said constraint as a test;  
monitoring conditions in said first network during said test; and  
returning to transferring said remote mirror copy data using said first network when said test reveals that conditions in said first network are again in accordance with said constraint.
12. *(Original)* The method of claim 10, wherein said first network is relatively less expensive to use than said second network.
13. *(Original)* The method of claim 10, wherein specifying said constraint for said first network comprises specifying at least one of a throughput, a busy rate, an error rate, and a presence of an error.
14. *(Original)* The method of claim 10, wherein said first network is a public network and said second network is a private network.
15. *(Previously Presented)* The method of claim 10, wherein said first network is a private network and said second network is a public network.
16. *(Original)* The method of claim 10, further comprising:

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detecting an abnormal condition in said first network and thereupon transferring data using said second network.

17. *(Currently Amended)* A method for selecting a network, said method comprising:  
providing primary storage for storing data;  
providing secondary storage remote from the primary storage for storing a copy of the data, the secondary storage being coupled to the primary storage via a plurality of networks, the plurality of networks including a first network and a second network, the first network having a higher priority than said second network;  
monitoring at least one condition in the plurality of networks;  
comparing said at least one condition against at least one user provided policy; and  
using said user provided policy to select[[ing]] at least one of a plurality of alternative ports connected to said plurality of networks in accordance with said comparison, wherein a connection between said primary storage and said secondary storage may be routed through at least two alternative ports of the plurality of alternative ports.

18. *(Currently Amended)* The method of claim 17, wherein the selecting of at least one of a plurality of alternative ports comprises:  
determining based upon a status indication whether to select a port from said plurality of alternative ports.

19. *(Previously Presented)* The method of claim 17, further comprising:

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associating said plurality of networks with a plurality of path groups;

wherein said policy is associated with at least one of a plurality of path groups.

20. *(Previously Presented)* The method of claim 17, wherein the monitoring of a condition comprises:

using a network monitor to detect a condition within at least one of said plurality of networks, and thereupon set a value in a status indication.